



2004

Assonet River: Foaming at the Mouth

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Foaming at the mouth

Introduction

- The Assonet River plays a large role in the recreational activities in our town, ranging from kayaking and canoeing, to a place for picnics and fishing .

- The importance of the river in the aesthetic value of our town has led our group's investigation and focus on the unseemly foam that can be seen along the river throughout the year.

Assonet River Facts

- **Stream order of three with tributaries ranging from Cedar Swamp to Holloway Brook**
- **The land use of the surrounding area is largely domestic, ranging from low to high density housing and recreation**
- **The sub-basin area of the river is 29.8 square miles**

Assonet River Facts

- **The Assonet River runs closely along main transportation routes such as 140, 24, and especially 79**
- **The River itself is home to a variety of dams along it's course, adding to both turbidity and overall flow.**
- **These dams were used in far previous years to power mills, once central to the towns along the river.**

Four Assonet River Sites

• **From source to confluence our sites occur as...**

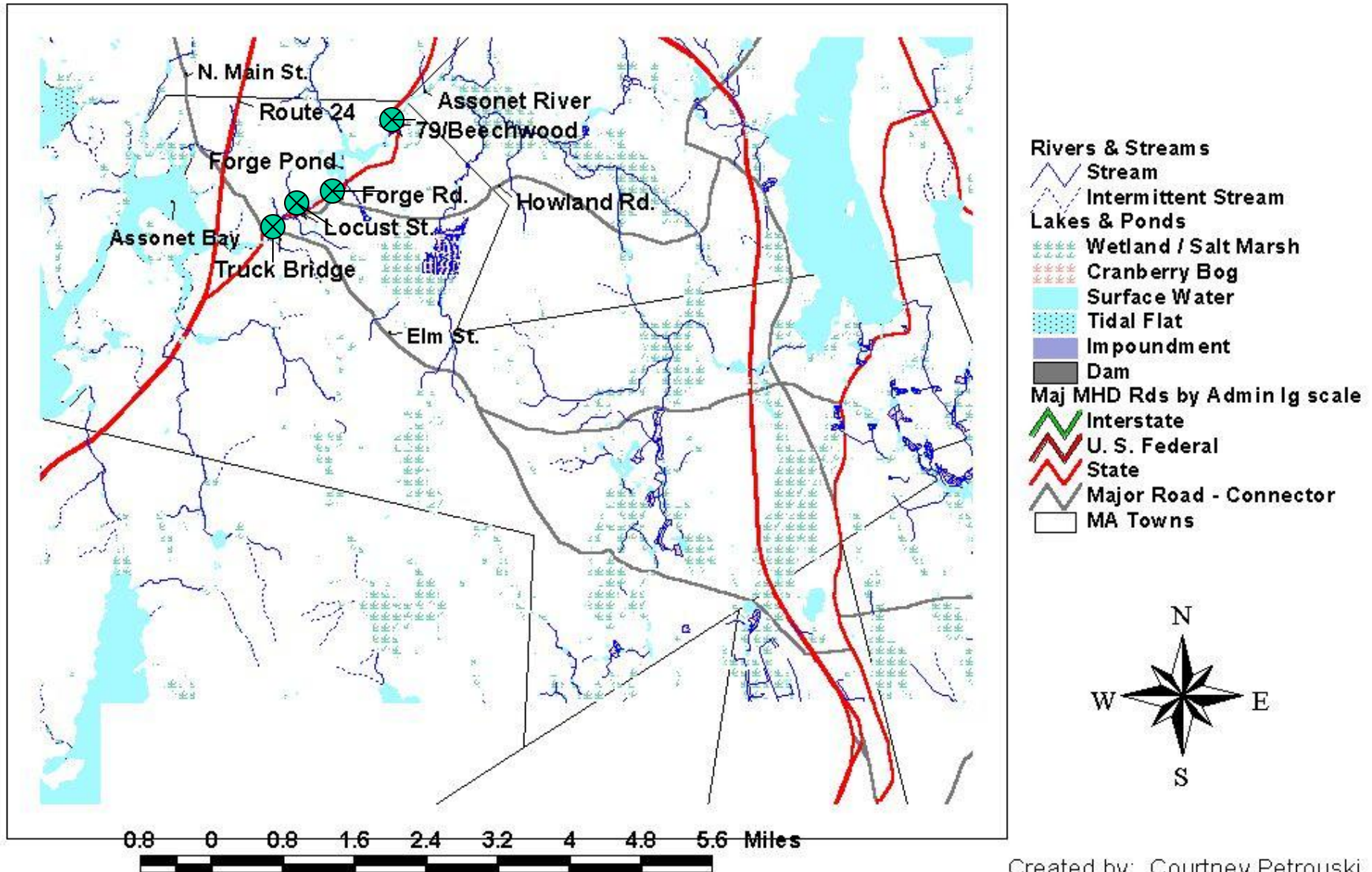
• **Beechwood/79(located near the Assonet Berkley line where Route 79 crosses the Assonet River)**

• **Forge Road (located parallel to Route 79 where the road crosses Forge Road in Assonet River)**

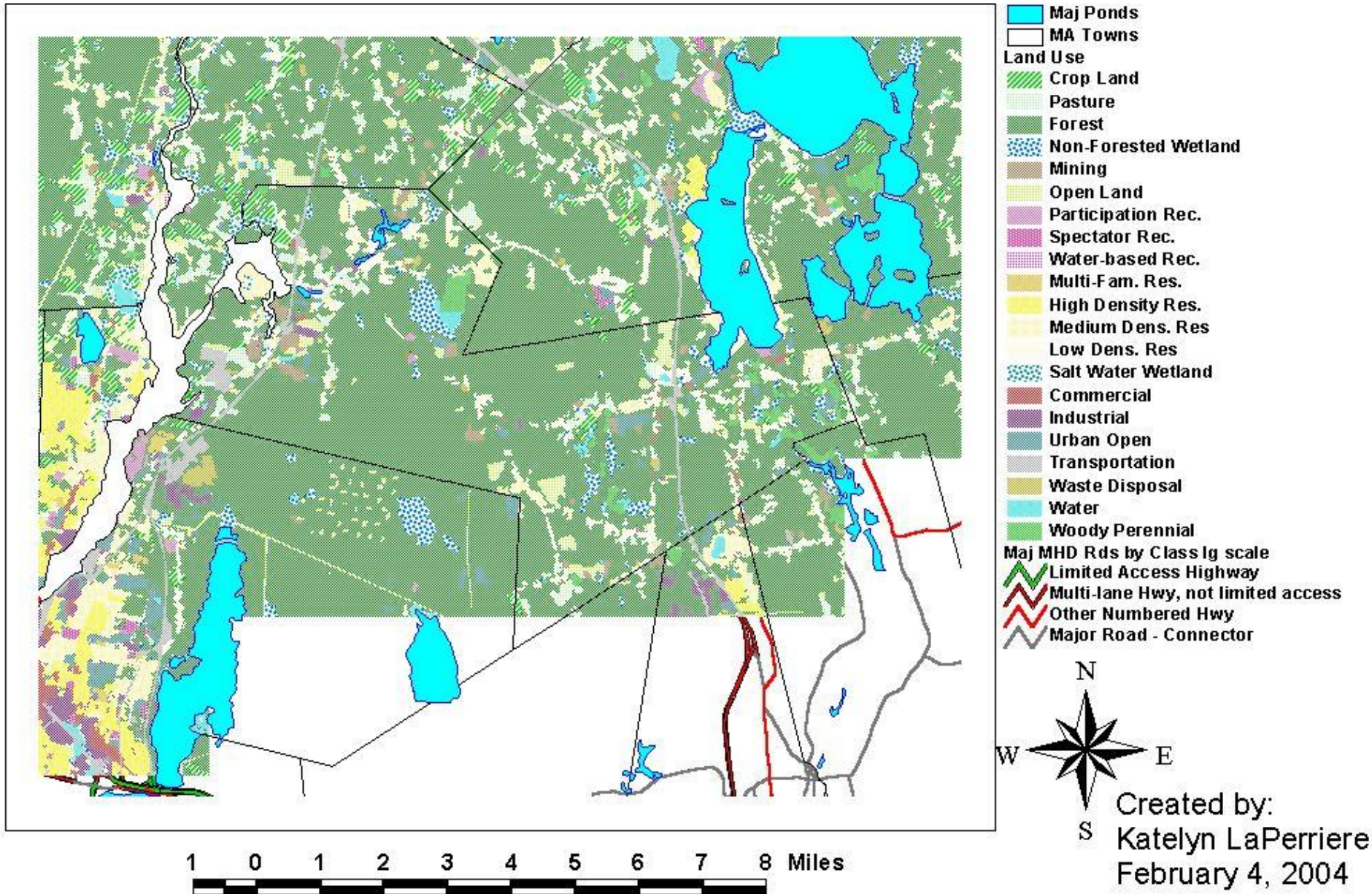
• **Locust Street (located parallel to route 79 where Locust Street crosses)**

• **Truck Bridge (also located parallel to Route 79 but where Assonet Industries was formerly located)**

Transportation Near the Assonet River



Assonet River Land Use



The Foam

- Foam forms in the wetlands then flows into the Assonet River as white foam.
- It collects downstream and becomes the brown foam.



- A bucket of white foam.

About Foam

- Created when the surface tension of water is reduced and air is mixed in causing a bubble formation.
- The surface tension is an attraction of surface molecules toward the center, which gives a drop of water its round shape.

What Foam Is Thought To Be

- Detergents made of alkyl benzene sulfonate
- Indicator of pollution
- Nonbiodegradable

What It Really Is

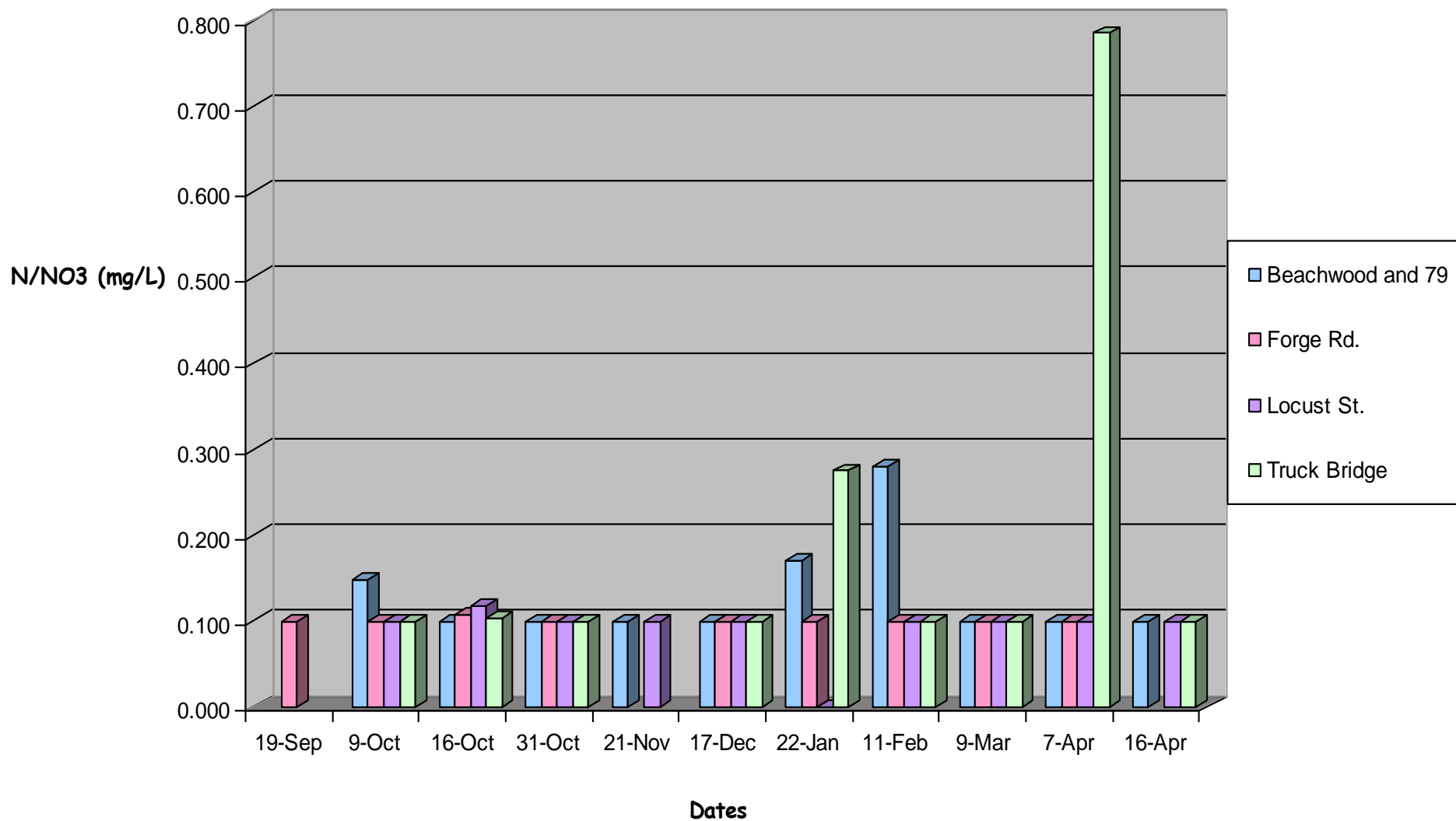
- Product of Nature
- Forms when small aquatic organisms die and decompose, releasing a variety of organic compounds
- Can give off an earthy or fishy odor
- Often is seen in the early morning

Assonet River Foam

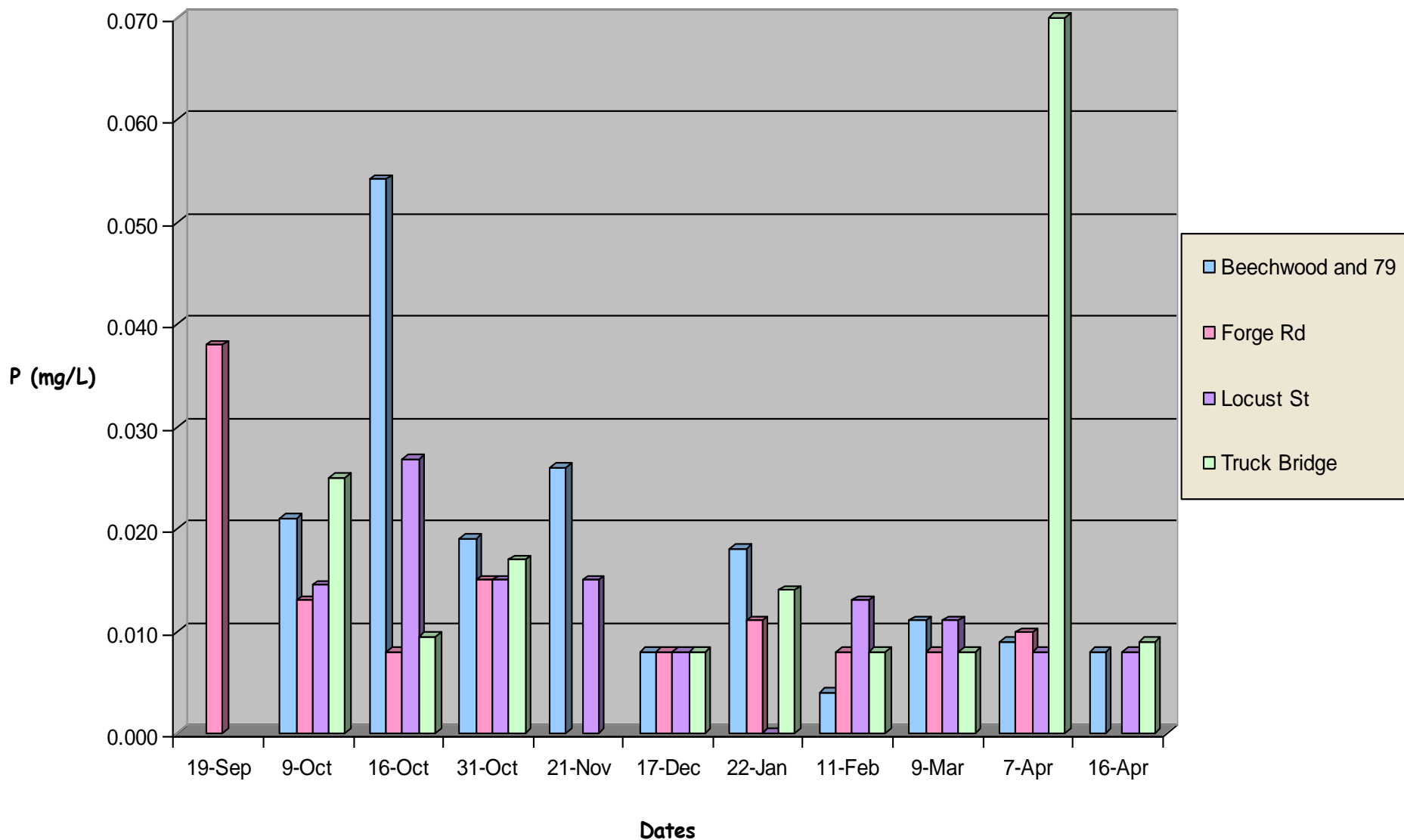
- Seen during all four seasons
- We only sample in the morning so we don't see it at other times
- It's brown shade with a fishy odor
- Is seen after impoundments
- More was seen after a big rain storm

Data

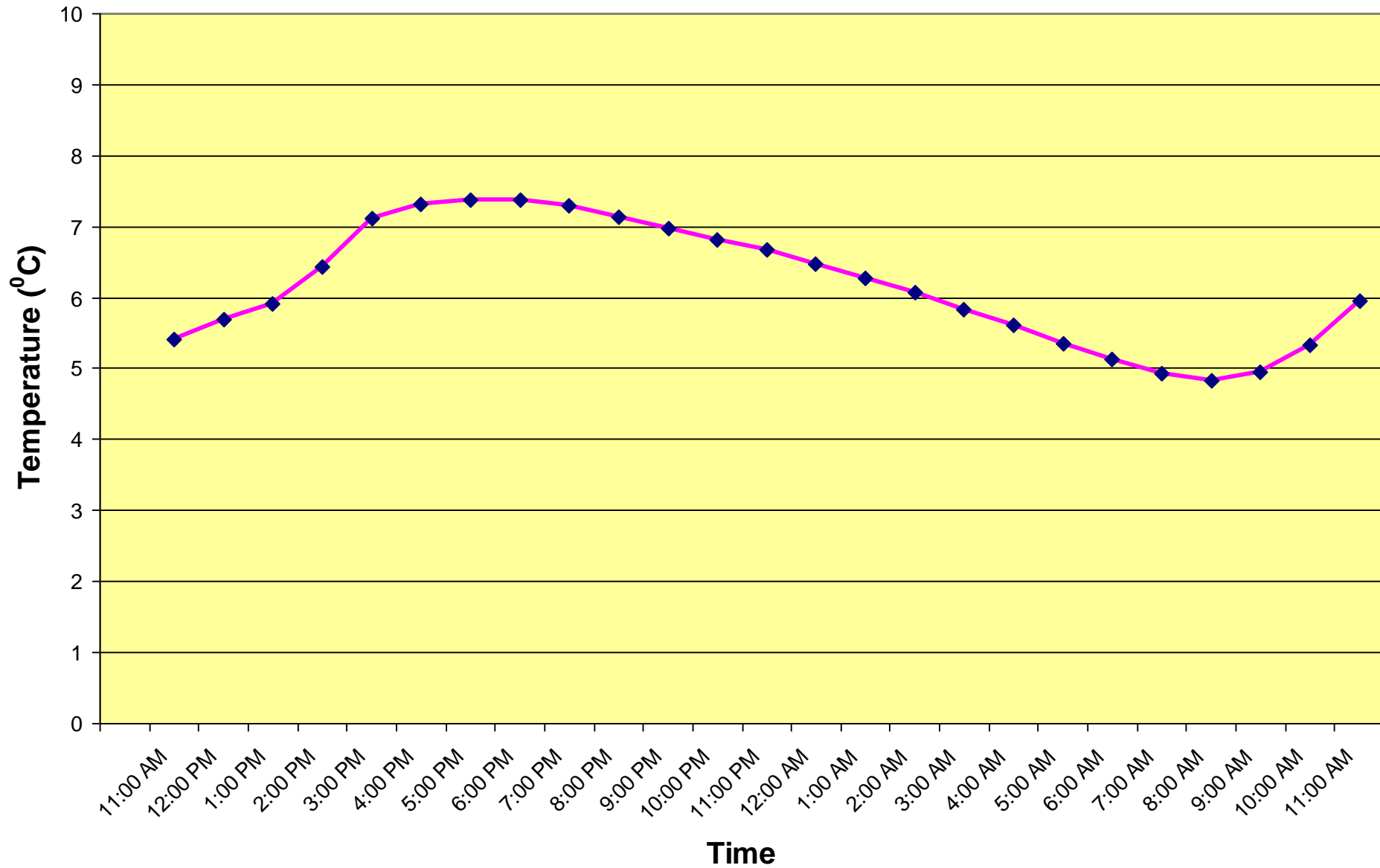
Nitrogen as Nitrate Assonet River 2003-2004



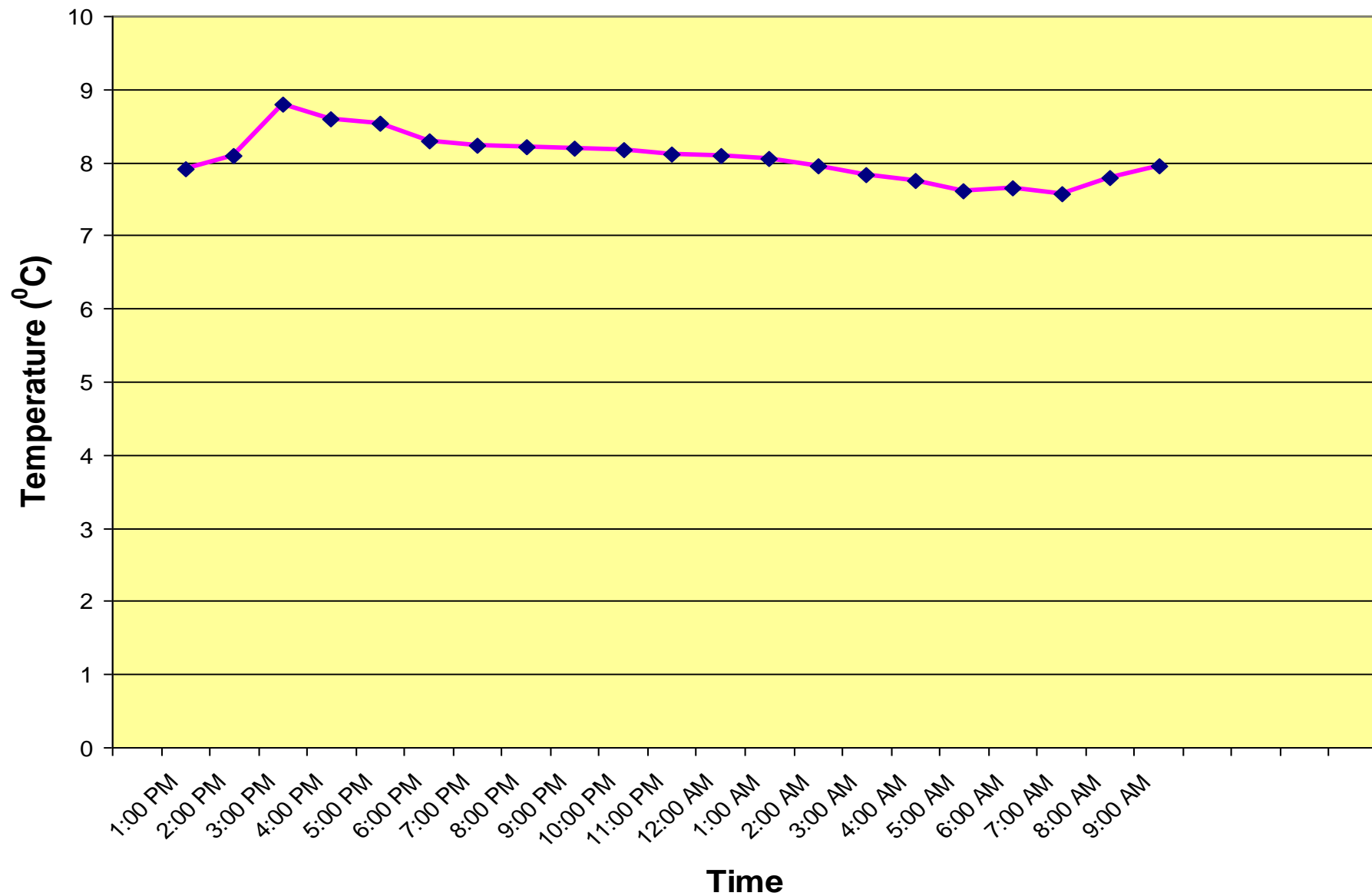
Reactive Phosphorus Assonet River 2003-2004



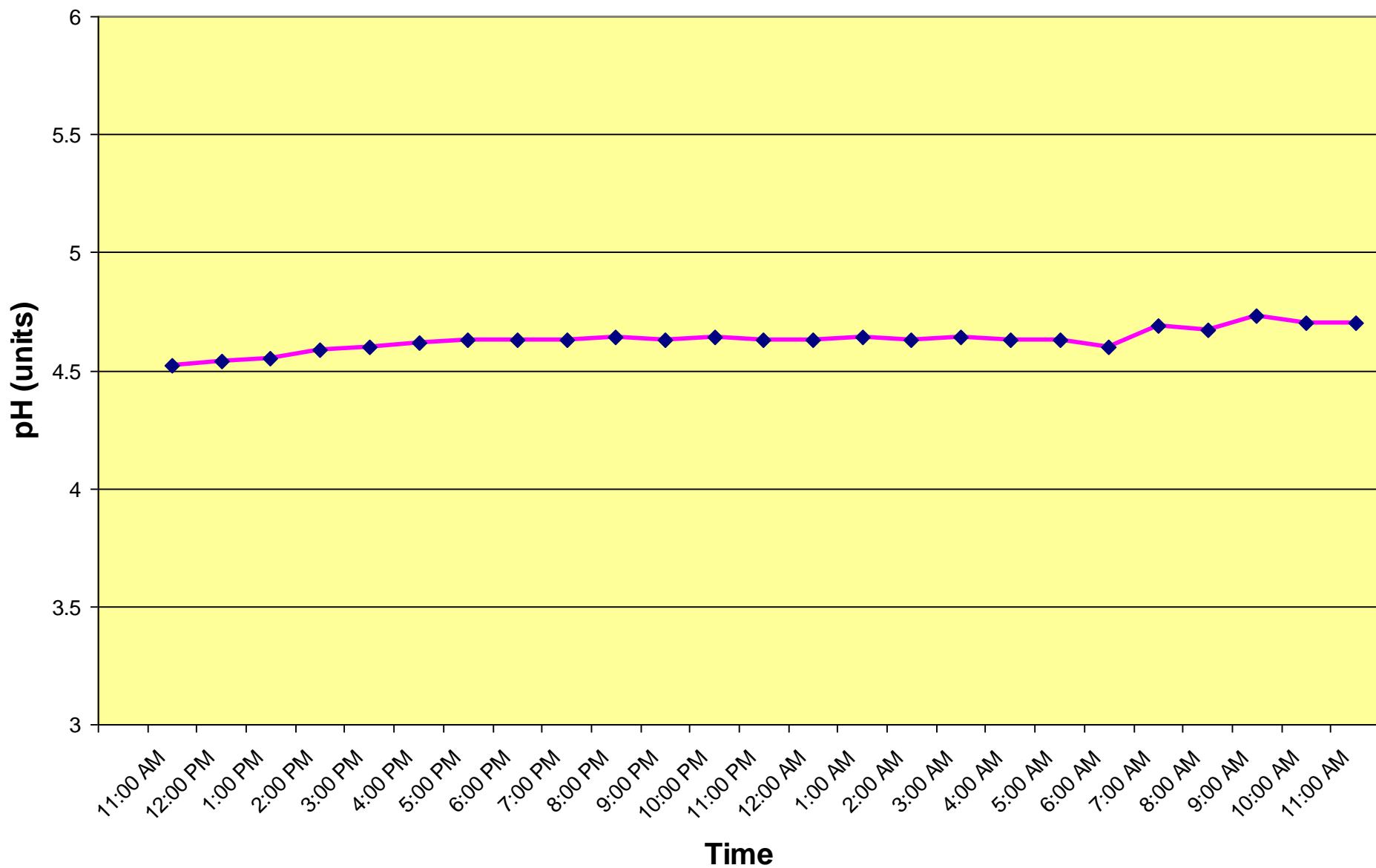
Temperature vs Time, Assonet River, Beechwood and Route 79, April 7th - 8th, 2004



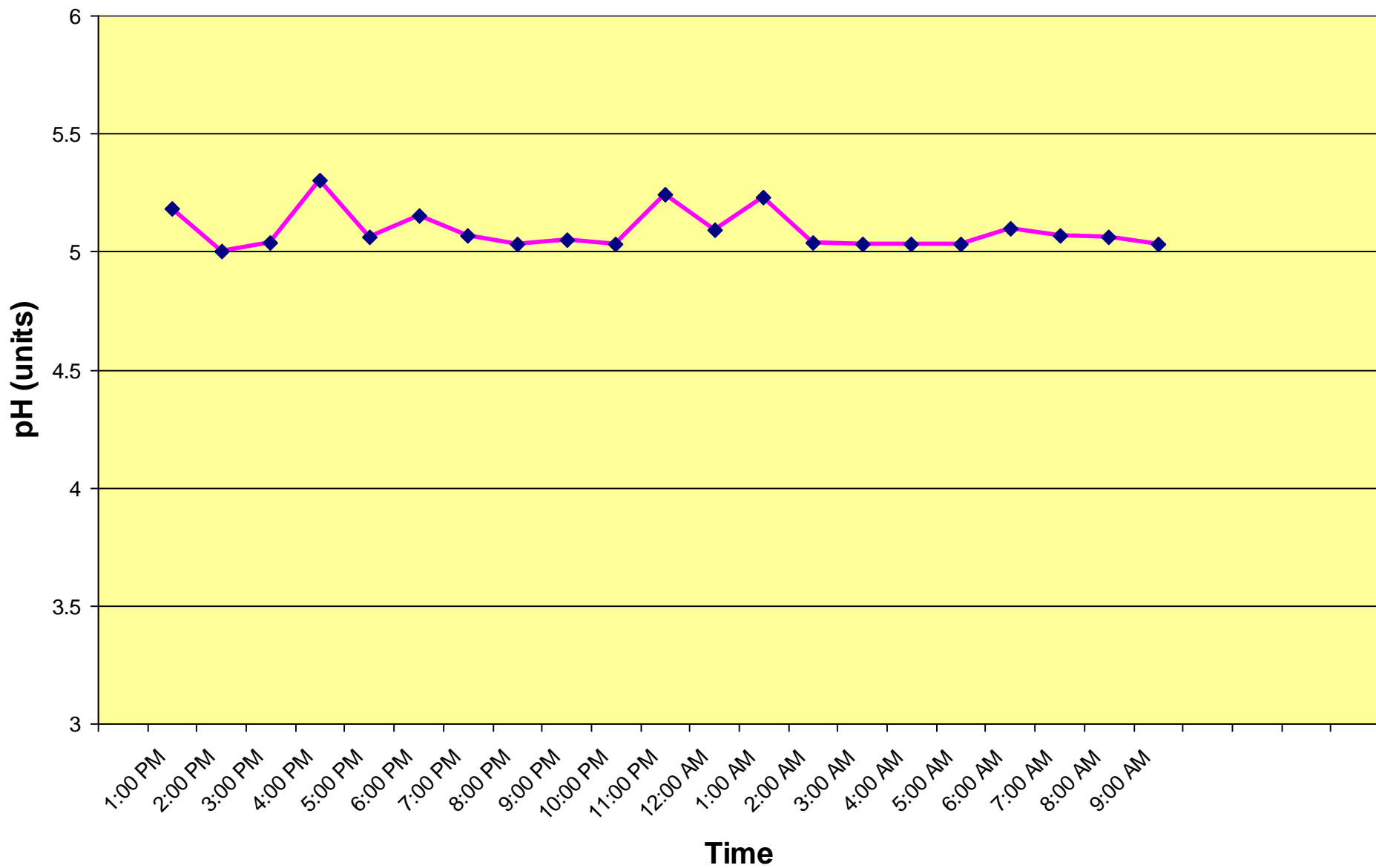
Temperature vs Time, Assonet River, Locust Street, April 8th - 9th, 2004



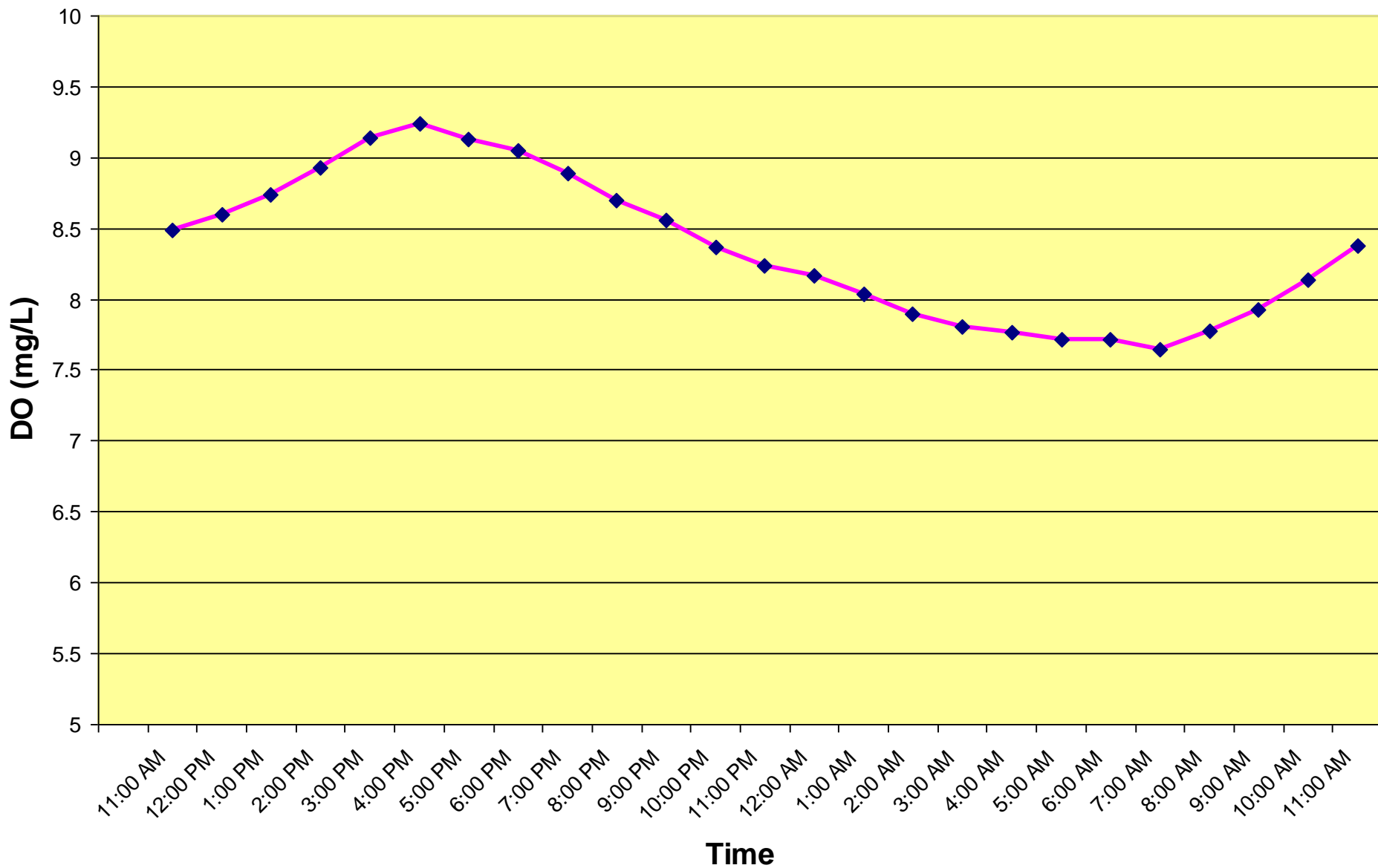
pH vs Time, Assonet River, Beechwood and Route 79, April 7th - 8th, 2004



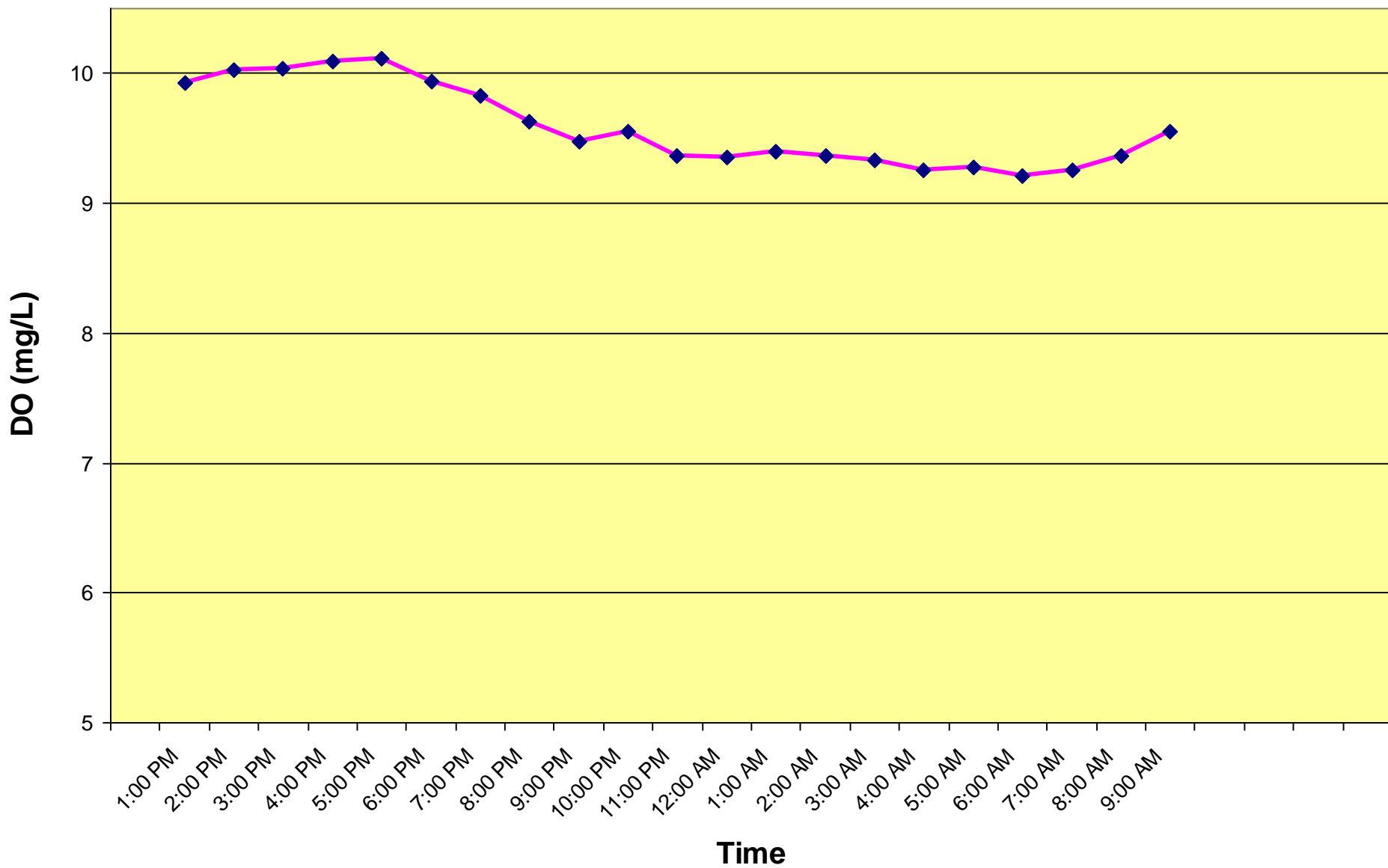
pH vs Time, Assonet River, Locust Street, April 8th - 9th, 2004



DO vs Time, Assonet River, Beechwood and Route 79, April 7th-8th, 2004



DO vs Time, Assonet River, Locust Street, April 8th - 9th, 2004



Conclusion

We conclude that these are the most likely causes of the foam...

- **Parts of the river are heavily channelized which causes even more turbulence and “white water”**
- **Decaying matter near wetland areas**

Conclusion

- Many swamps and tributaries create much flow into the river
- Through churning of the water itself (there are waterfalls because of dams)
- Pollution
 - Point source pollution from factories/industrial use
 - Non-point source pollution from residential areas

Conclusion

- As a group we decided that the foam is mostly caused as a result of the water being churned up after dams in conjunction with large amounts of decaying organic matter.
- We ruled out pollution because nutrient levels are generally normal and the brown foam often seems to be prevalent.

Documentation

<http://www.state.me.us/dep/blwq/doclake/foam.htm> – information about foam

<http://www.geology.utah.gov/surveynotes/gladasked/gladfoam.htm> – info on causes of foam

<http://www.pages.sssnet.com/go2erie/qa3.htm> – info specifically on Assonet River foam

<http://history.rays-place.com/ma/freetown.htm> – history on Freetown and Assonet River

www.s-t.com/daily/08-97/08-22-97/b02lo093.htm – happenings along the Assonet River